

**WATER QUALITY TEAM MEETING NOTES**  
**March 16, 2004**  
**National Marine Fisheries Service Offices**  
**Portland, Oregon**

***1. Introductions and Review of the Agenda.***

Mark Schneider of NMFS, WQT chair, welcomed everyone to the meeting, held March 16 at the National Marine Fisheries Service's offices in Portland, Oregon. The meeting was co-chaired by Russell Harding of ODEQ and facilitated by Richard Forester. The meeting agenda and a list of attendees are attached as Enclosures A and B. Please note that some of the enclosures referenced in these meeting notes may be too lengthy to routinely attach to the minutes; please contact Kathy Ceballos (503/230-5420) to obtain copies.

***2. SYSTDG Total Dissolved Gas Model Updates and Applications for 2004.***

Jim Adams noted that Mike Schneider's SYSTDG model will be used to help the Corps set spill caps in 2004; we anticipate that it will allow us to test some assumptions to set those spill caps with more accuracy in the coming year, Adams said. Mike Schneider then took the lead on this agenda item, which included a presentation titled "Total Dissolved Gas Exchange in the Columbia River Basin: Decision Support SYSTDG." Schneider noted that SYSTDG is more a decision support tool than a model; it will allow the Corps to look in greater detail at some of the cause-and-effect relationships driving TDG production in the basin. The overall goal is to allow the Corps to make appropriate spill decisions this year and in future years, Schneider said.

Moving into his presentation, Schneider touched on the following major topic areas:

- Introduction – the BiOp requirement to develop a systemwide TDG model, the evaluation of in-season management of river operations, various gas abatement alternatives, and TDG exchange processes.
- TDG exchange at dams in the Columbia River Basin (flow diagram)
- TDG exchange: TDG system properties and spill management (flow diagram)
- SYSTDG model capabilities: real-time spill management, process description, prediction/forecasting TDG pressures in project flows, quality control for the fixed monitoring system
- Model limitations: not suited for water control simulations, simple transport routine, no simulation of heat budget, limited spatial resolution

- Model approach: develop empirical TDG model for each dam, powerhouse and spillway releases are treated separately
- Sample model data (graph)
- Surface circulation patterns downstream of Lower Granite Dam, May 30, 2002 (video)
- What SYSTDG is: an Excel spreadsheet with various macros and statistical functions built in, with interactive graphic and statistical outputs as well as database interactivity. The intent was to make the model as easy to use as possible
- Model inputs, domain (Columbia River from RM 120 to Grand Coulee Dam, the Snake River, the Clearwater from the confluence up to Dworshak Dam, boundary conditions
- Results: hourly model output for TDG pressure, water temperature, project operations, graphs observed vs. calculated data, provides a statistical summary.
- The SYSTDG interface
- Sample model input data
- Sample calculated data
- Sample interactive plot (graph)
- Using SYSTDG to manage spill in-season: How did we arrive at current conditions? Are adjustments needed to current spill policy? Where are we headed tomorrow?
- Sample model outputs for The Dalles Dam – observed vs. calculated
- Sample model outputs for Bonneville Dam – observed vs. calculated
- Spill management as constrained by TDG criteria (flow diagram)
- What's new in 2004 – automated database assembly
- Information management and decision support (flow diagram)
- What's new in 2004 – daily statistics for observed and calculated properties, updated interactive figures, updated TDG production relations, forecasting procedures, optimization strategy for estimating spill discharge

In the course of this presentation, Schneider answered a variety of technical questions and comments about how the model was developed and how it functions. Where can we get updated copies of the model and users' manual? Mark Schneider asked. Mike Schneider replied that anyone interested in these items should contact him directly; he noted that the updated users' manual is still under development.

Mike Schneider also provided recent data from the operation of the Bonneville Powerhouse 2 corner collector, noting that even this relatively modest spill produced an observable response at the TDG monitoring stations downstream, although gas levels are still well below 110%.

### ***3. Fixed Monitoring Station at Camas/Washougal.***

Margaret Filardo said this is primarily an information item; two meetings ago, the WQT heard a presentation on the fixed monitoring stations below Bonneville Dam. The team then discussed the use of a particular station as a point of compliance for the waivers, she said; at that point, it became clear that political considerations were overriding technical concerns. The Corps stated that they were neutral on this issue, said Filardo, but were merely waiting for someone to ask them to use a different station. Subsequent to that, she said, the state, federal

and tribal fishery agencies reviewed the applicable information, and wrote a letter to the Corps, recommending that they use the Bonneville tailwater monitoring station in lieu of the Camas/Washougal station, and asking them to make a suitable application to the state water quality agencies. Filardo distributed copies of this letter (Enclosure C), saying that it was her assumption that the Corps will be providing its response to this letter.

Jim Adams replied that it may be a mischaracterization to say that the Corps is neutral on this issue; we want to do what's best for all concerned while making sure that we're in compliance with the state waivers, he said. In response to a question from Adams, Filardo said the Corps' response to the salmon managers' letter should be sent to David Wills, the chairman of the Fish Passage Advisory Committee, with copies to each of the agencies that participated in the development of the letter. Adams noted that there is ongoing Corps research at Bonneville (at the corner collector) that might be impacted by this recommended change.

Adams said the Corps will look at the various arguments included in the letter, and will talk to the both Oregon DEQ and BPA to determine their position on this issue. Because of the lack of specific language as to what constitutes compliance, said Adams, it will be up to the Corps to determine how best to ensure that we remain in compliance. Do you have a timeline in mind? Filardo asked. No, Adams replied – we will proceed as expeditiously as possible, but we also need to be cautious and cover all the bases. We will then make an appropriate response to the fishery management agencies, he said. Will this issue need to come back to the WQT at some point in the future? Forester asked. No, Filardo replied, other than a brief statement about the outcome of the Corps' deliberations. Paul Pickett noted that Washington DEQ's draft standards do not include Camas/Washougal as a point of compliance. We'll be talking to the State of Washington about how the Corps can best demonstrate compliance, said Adams. In response to a question, Pickett said it is his understanding that as long as the TDG standards are met in the Bonneville forebay and at whatever downstream monitoring station the WQT deems most appropriate, then the entire river below Bonneville will be deemed in compliance.

#### ***4. Other.***

Pickett noted that the Washington legislature recently passed the Credible Data bill, which will impact what Washington DEQ is able to accept in determining compliance. This will be an evolving story as DEQ helps to develop that policy, Pickett said; adding that he will provide further updates as more information becomes available. You can go to the Legislature's website to read the bill, he added.

#### ***5. Next WQT Meeting Date.***

The next Water Quality Team meeting was set for Tuesday, April 13. Meeting summary prepared by Jeff Kuechle.